UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue, Suite 155
Seattle, WA 98101

WATER
DIVISION

January 14, 2022

Candon Tanaka
Shoshone-Bannock Tribes
12392 W. Reservation Road
P.O. Box 306
Fort Hall, ID 83203

Re: EPA comments on the Shoshone-Bannock Tribes' Proposed Water Quality Standards

Dear Mr. Tanaka,

Thank you for the opportunity to provide comments on the Shoshone-Bannock Tribes' ("the Tribes") proposed water quality standards (WQS). The U.S. Environmental Protection Agency appreciates the efforts the Tribes have made to develop these WQS and to coordinate with EPA staff on the rulemaking process. EPA offers the following comments for your consideration. In addition, we have incorporated several minor edits and suggestions into a redline version of the proposed WQS, which will be transmitted separately by email.

Narrative Temperature Criteria, Section 3.2

Section 3.2. includes narrative temperature criteria with the following language from subsection 3.2.a:

> *Normal, seasonal variations of surface water temperatures that are necessary to support aquatic species shall be maintained. However, within the natural range of climatic conditions, high water temperatures caused by unusually high ambient air temperatures are not violations of these standards.*

The second sentence provides an air temperature exclusion to account for potential warm water conditions. Air temperature exclusion provisions are sometimes included in WQS to add enforcement flexibility for numeric temperature criteria during extreme temperatures. EPA recommends defining "unusually high ambient air temperatures" with a frequency of exceedance (i.e., daily maximum air temperature exceeding the XX percentile value of the annual maximum air temperatures, as calculated using at least 10 years of air temperature data from the natural historic record). Otherwise, as written, the exclusion can be broadly interpreted. Please refer to the *EPA Region 10 Guidance for Pacific Northwest State and Tribal Temperature Water Quality Standards*[1] for more detail. The discussion on page 20 of the guidance document provides ways to account for unusually warm conditions in WQS.

Total Phosphorus, Section 5.1.f.

[1] EPA. (2003). EPA Region 10 Guidance for Pacific Northwest State and Tribal Temperature Water Quality Standards. (EPA 910-B-03-002). U.S. Environmental Protection Agency, Region 10. Retrieved from https://www.epa.gov/wa/northwest-water-quality-temperature-guidance-salmon-steelhead-and-bull-trout

EPA recently finalized recommendations for aquatic life criteria to address nutrient pollution in lakes and reservoirs[2] (published August 2021) and recommends the Shoshone-Bannock Tribes compare the proposed criteria with the 2021 recommendations to confirm that all important designated uses are protected by your proposed total phosphorus criteria. EPA would like to offer our assistance with deriving criteria for other nutrient-related parameters (i.e., total nitrogen) if the Tribes are interested in pursuing this process.

pH for Aquatic Life Communities, Section 5.2.d.1.

The pH range of 6.5 to 9.0 proposed in section 5.2.d.1 is applied to protect the Coldwater Aquatic Life and Salmonid Spawning designated uses. To account for the limited margin of safety of the lower and upper ends of the pH range, EPA recommends the Shoshone-Bannock Tribes consider adding a narrative provision to the pH range, limiting human-caused variation in pH to no more than +/- 0.2 pH units within the numeric range.

Dissolved Oxygen (DO) Criteria

The DO criteria proposed for the protection of the Coldwater Aquatic Life designated use is provided in section 5.2.e.1 of the WQS as follows:

> *Dissolved Oxygen (DO) concentrations exceeding 6 mg/l at all times. In lakes and reservoirs this standard does not apply to:*
>
> > *The bottom 20% of water depth in natural lakes and reservoirs where depths are 35 meters or less.*
> >
> > *The bottom 7 meters of water depth in natural lakes and reservoirs where depths are greater than 35 meters.*
> >
> > *Those waters of the hypolimnion in stratified lakes and reservoirs.*

EPA would like to discuss the above DO criteria in further detail with the Tribes to ensure the Coldwater Aquatic Life use is adequately protected. For example, DO criteria minima of 6 mg/L may not be sufficiently protective of the Tribes' Coldwater Aquatic Life use. Based on the outcomes of multiple Endangered Species Act (ESA) consultations in Region 10, we generally encourage states and tribes adopt a DO criterion that must exceed 8 mg/L at all times to protect sensitive lifestages of cold-water aquatic species. EPA would like to review any supporting documentation regarding the extent of Coldwater Aquatic Life use and/or DO reference data in the Fort Hall Reservation waters to ensure the Coldwater Aquatic Life use is sufficiently protected.

Dissolved Oxygen Criteria for Lakes and Reservoirs, Section 5.2.e.1

The DO provision for the protection of the Coldwater Aquatic Life use also identifies areas where the numeric DO criteria do not apply within lakes and reservoirs (see excerpted section above). As written, this provision provides an exemption from the WQS, leaving some areas without DO limits. In place of adopting "does not apply" language for stratified lakes and reservoirs, EPA recommends the Tribes consider adopting a narrative provision that limits variation in DO levels caused by anthropogenic

[2] EPA. (2021). Ambient Water Quality Criteria to Address Nutrient Pollution in Lakes and Reservoirs. (EPA-822-R-21-005). U.S. Environmental Protection Agency. Retrieved from https://www.epa.gov/nutrient-policy-data/ambient-water-quality-criteria-address-nutrient-pollution-lakes-and-reservoirs

sources and/or requires sufficient DO refugia be maintained and protected to provide protection of Coldwater Aquatic Life species. Below are two examples of narrative DO criteria for stratified lakes and reservoirs for your consideration. EPA is available to discuss this topic further with the Tribes.

Example 1 – Colorado DO narrative:

(1) No reductions in dissolved oxygen levels due to anthropogenic sources are allowed.
(2) In lakes and reservoirs that are [naturally] stratified, the dissolved oxygen criteria apply to the epilimnion and metalimnion strata. Dissolved oxygen in the hypolimnion may, due to the natural conditions, be less than the [above] criteria.
(3) In lakes and reservoirs that are not stratified, the dissolved oxygen criteria apply throughout the water column.

Example 2 – Pennsylvania narrative DO provision for lakes, ponds, and impoundments:

The following specific dissolved oxygen criteria recognize the natural process of stratification in lakes, ponds and impoundments. These criteria apply to flowing freshwater and to the epilimnion of a naturally stratified lake, pond or impoundment. The hypolimnion in a naturally stratified lake, pond or impoundment is protected by the narrative water quality criteria in [Part III] (relating to general water quality criteria). For nonstratified lakes, ponds or impoundments, the dissolved oxygen criteria apply throughout the lake, pond or impoundment to protect the critical uses.

<u>DO for Salmonid Spawning Use, Section 5.2.f.1.</u>

The DO criteria proposed for the protection of the Salmonid Spawning designated use is provided in section 5.2.f.1. of the WQS as follows:

1. *Dissolved Oxygen.*
   a. *Intergravel Dissolved Oxygen.*
      1) *One (1)-day minimum of not less than 5.0 mg/l.*
      2) *Seven (7)-day average mean of not less than 6.0 mg/l.*
   b. *Water Column Dissolved Oxygen (applies after salmonid fry emergence).*
      1) *One (1)-day minimum of not less than 6.0 mg/l or, within the natural range of climatic conditions, 90% of saturation, whichever is greater.*

EPA would like to discuss the above proposed DO criteria with the Tribes regarding the protectiveness of the Salmonid Spawning designated use. From previous ESA consultations within the region, we consider intergravel DO concentrations that exceed 8 mg/L as a spatial median to be protective of salmonid spawning. In combination with intergravel DO levels exceeding 8 mg/L, EPA suggests the Tribes consider adopting a water column DO criterion of ≥9 mg/L be applied at all times to provide the same level of protection for eggs and fry.

Similar to the comment above, EPA would like to review documentation of the reference levels of dissolved oxygen in the Fort Hall Reservation waters. Additionally, any supporting information that describes the extent of the Salmonid Spawning use in the Fort Hall Reservation waters (i.e., species of salmonids to be protected by the salmonid spawning use or any threatened/endangered species that may reside in the Fort Hall Reservation waters, etc.) would assist EPA with evaluating the protectiveness of the criteria.

Numeric Temperature, Section 5.2.e.2

The numeric temperature criteria proposed for the protection of the Coldwater Aquatic Life designated use is provided in section 5.2.e.2. of the WQS as follows:

> *Water temperatures of 22 degrees C or less with a maximum daily average of no greater than 19 degrees C.*

EPA Region 10's temperature recommendations[3] provide guidance for deriving temperature criteria protective of various lifestages of salmonid and non-salmonid aquatic species. Based on the temperature guidance and supporting issue papers, a 22°C maximum falls outside of the optimal range for the more sensitive lifestages of aquatic life, including salmonids. Please refer to page 25 of the *EPA Region 10 Guidance for Pacific Northwest State and Tribal Temperature Water Quality Standards* for Region 10's temperature criteria recommendations.

It would be helpful for EPA's review if additional information is available about the lifestages of aquatic species that may be present in the Fort Hall Reservation waters, spatial/temporal temperature patterns, and/or data demonstrating summer maximum conditions.

DDT Aquatic Life Criteria, Appendix 1, Table 1

The Clean Water Act 304(a) recommendations for DDT[4] were derived to be criteria for DDT and its metabolites (EPA 1980). To appropriately apply the DDT acute and chronic values of 1.1 and 0.001 µg/L, respectively, EPA recommends the addition of a footnote for DDT that requires the criteria values be applied to the sum of DDT and its metabolites, including DDT, DDD, and DDE.

For reference, the following footnote was included in the 2002 304(a) recommendations:[5]

> This criterion applies to DDT and its metabolites (i.e., the total concentration of DDT and its metabolites should not exceed this value).

Human Health Criteria for Nickel, Selenium, and Zinc, Appendix 1, Table 3

A relative source contribution (RSC) value of 1 was used to calculate the human health criteria (HHC) for nickel selenium, and zinc in the Shoshone-Bannock Tribes' WQS. EPA's 2000 Human Health Methodology (2000 Methodology) recommends using RSC factors within the range of 0.2 (20%) to 0.8 (80%) to derive HHC for non-carcinogenic pollutants. EPA recommends a default RSC value of 0.2 in the 2000 Methodology, except when scientific data demonstrates other sources and routes of exposure besides water and freshwater/estuarine fish are not anticipated for the pollutant in question. We recommend the Tribes revise the HHC for nickel, selenium, and zinc to reflect the recommended default RSC of 0.2.

---

[3] EPA. (2003). EPA Region 10 Guidance for Pacific Northwest State and Tribal Temperature Water Quality Standards. (EPA 910-B-03-002). U.S. Environmental Protection Agency, Region 10. Retrieved from https://www.epa.gov/wa/northwest-water-quality-temperature-guidance-salmon-steelhead-and-bull-trout

[4] EPA. (1980). Ambient Water Quality Criteria for DDT. (EPA 440/5-80-038). Washington, DC. US Environmental Protection Agency. Retrieved from https://www.epa.gov/sites/production/files/2019-03/documents/ambient-wqc-ddt-1980.pdf

[5] EPA. (2002). National Recommended Water Quality Criteria: 2002. (EPA-822-R-02-047) Environmental Protection Agency, Washington, DC. Office of Water. United States Environmental Protection Agency, Office of Water. Retrieved from https://www.epa.gov/sites/default/files/2018-12/documents/national-recommended-hh-criteria-2002.pdf

Alternatively, if marine fish are accounted for in the selected fish consumption rate of 175 grams/day, the Tribes could consider adopting an RSC of 0.5 for the three pollutants. This option is consistent with the EPA's approach in the 2016 federal promulgation of HHC for Washington State. Please refer to the table below for the resulting criteria values.

RSC	Nickel		Selenium		Zinc	
	Water + Organism	Organism only	Water + Organism	Organism only	Water + Organism	Organism only
0.2	30	40	20	100	500	600
0.5	80	100	60	200	1000	1000

EPA recognizes that the Tribes' use of the RSC of 1 was the result of an inconsistency between the RSC inputs used in the HHC calculator on EPA's Tools for Tribes webpage[6] and 2000 Methodology for nickel, selenium, and zinc. The HHC calculator incorrectly applied a value of 1 (or 100%) for the RSCs for nickel, selenium, and zinc. The HHC calculator has since been corrected to align with the recommendations in the 2000 Methodology.

Thank you again for the opportunity to provide comments. Please do not hesitate to contact me at Renkens.Rachael@epa.gov or (206) 553-1580 if you have any questions.

Sincerely,

RACHAEL RENKENS

Digitally signed by RACHAEL RENKENS
Date: 2022.01.14 07:06:04 -08'00'

Rachael Renkens
Water Quality Standards Coordinator

[6] https://www.epa.gov/wqs-tech/water-quality-standards-tools-tribes